



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO.     |
|---|-------------|----------------------|---------------------|----------------------|
| 10/599,800  | 10/10/2006  | Kazuki Honda         | MAT-8914US          | 4807                 |
| 52473   | 7590        | 11/12/2008           | EXAMINER            |                      |
| RATNERPRESTIA<br>P.O. BOX 980<br>VALLEY FORGE, PA 19482 |             |                      |                     | PRITCHARD, JASMINE L |
| ART UNIT  |             | PAPER NUMBER         |                     |                      |
| 2614  |             |                      |                     |                      |
| MAIL DATE   |             | DELIVERY MODE        |                     |                      |
| 11/12/2008  |             | PAPER                |                     |                      |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/599,800             | HONDA ET AL.        |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | JASMINE PRITCHARD      | 2614                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 October 2006.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-8 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 10/10/2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/10/2006</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
|   | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

### ***Drawings***

1. Figure 6 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “29” has been used to designate both stopper and stopper of another embodiment. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the two surfaces when viewed toward

the surface of the frame showing an angle greater than 0 degrees but less than 180 degrees must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible

harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 8 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 6 of U.S. Patent No. 7,362,877 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because they both provide means whereby the stopper being configured to restrict bending of the sheet

metal constituting the terminal within a threshold value of reversibility of a material of the metal.

**Note:** *bold, italics represent equivalent words/limitations.*

| 10/599800  | 11/570,550   |
|--|--|
| <p><b>Claim 1:</b></p> <p>An electro-acoustic converter comprising:<br/>a magnetic circuit; a frame <b>bonded</b> to the magnetic circuit; a diaphragm <b>bonded</b> to a circumferential edge of the frame; a voice coil <b>attached</b> to the diaphragm in a manner that a part thereof is located in a magnetic gap of the magnetic circuit; a terminal made of a sheet metal having spring property and electrical conductivity, a part of the terminal being fixed to the frame and electrically connected to the voice coil, the terminal having a bent portion and a contact portion for connection to an external circuit; and a <i>stopper</i> provided around a portion of the sheet metal constituting the terminal at one side nearer</p> | <p><b>Claim 1:</b></p> <p>An electro-acoustic <b>transducer</b>, comprising:<br/>a magnetic circuit; a frame <b>combined</b> with the magnetic circuit; a diaphragm <b>combined</b> with a periphery of the frame; a voice coil <b>combined</b> with the diaphragm and partially arranged in a magnetic gap of the magnetic circuit; a terminal made of a metal plate having spring property and electrical conductivity, and electrically connecting an outside circuit and the voice coil <b>utilizing spring pressure generated when the metal plate is bent</b>;<br/>and a <b>holder</b> made of an elastic body and covering the frame,</p> |

|   |  |
|---|--|
| <p>to the frame than the bent portion, the stopper protruding from a surface of the frame where the contact portion of the terminal protrudes, whereby the stopper being configured to restrict bending of the sheet metal constituting the terminal within a threshold value of reversibility of a material of the metal.</p>  | <p>wherein the holder forms a stopper for restricting a bend of the metal plate forming the terminal to within a reversible limit of the metal.</p>  |
| <p><b>Claim 8:</b><br/><br/>An electronic device comprising: an electro-acoustic converter having; a magnetic circuit; a frame <b>bonded</b> to the magnetic circuit; a diaphragm <b>bonded</b> to a <b>circumferential</b> edge of the frame; a voice coil <b>attached</b> to the diaphragm in a manner that a part thereof is located in a magnetic gap of the magnetic circuit; a terminal made of a sheet metal having spring property and electrical conductivity, a part of the terminal being fixed to the frame and electrically connected to the voice coil, the</p> | <p><b>Claim 6:</b><br/><br/>An electronic device, comprising: an electro-acoustic <b>transducer</b> including: a magnetic circuit; a frame <b>combined</b> with the magnetic circuit; a diaphragm <b>combined</b> with a <b>periphery</b> of the frame; a voice coil <b>combined</b> with the diaphragm and partially arranged in a magnetic gap of the magnetic circuit; a terminal made of a metal plate having spring property and electrical conductivity, and electrically connecting an outside circuit and the voice coil utilizing spring pressure</p> |

|  |   |
|--|---|
| <p>terminal having a bent portion and a contact portion for connection to an external circuit; and a stopper provided around a portion of the sheet metal constituting the terminal at one side nearer to the frame than the bent portion, the stopper protruding from a surface of the frame where the contact portion of the terminal protrudes, whereby the stopper being configured to restrict bending of the sheet metal constituting the terminal within a threshold value of reversibility of a material of the metal, and an electronic circuit connected electrically with the electro-acoustic converter via the contact portion, electronic circuit being configured to supply electric power to the electro-acoustic converter.</p> | <p>generated when the metal plate is bent; and a holder made of an elastic body and covering the frame, wherein the holder forms a stopper for restricting a bend of the metal plate forming the terminal to within a reversible limit of the metal;</p> <p>and an electronic circuit electrically connected with the electro-acoustic <b>transducer</b> through the terminal, and feeding the electro-acoustic transducer.</p> |
|--|---|

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.*

Claims 1- 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aujla et al. (US Patent 6,860,766 B2), and further in view of AAPA.

Regarding Claims 1 and 8:

Aujla et al. teaches an electronic device (501 – *electrical device*) comprising: terminal (111 – *contact*) made of sheet metal (See column 5, lines 25-27 **and** notice “*The contact 111 can be made from metal...*”) having spring property (See column 3, line 37 **and** notice “*resiliently flexible electrical contacts*”) and electrical conductivity (See column 3, lines 40-42 **and** notice “*electrically conductive*”), a part of the terminal being fixed to the frame (column 3, lines 57-58), the terminal having a bent portion (142 – *body portion*) and a contact portion (144 – *contact portion*) for connection to an external circuit (column 1, lines 43-45 and lines 50-51); and a stopper (170 – *cylinder*) provided around a portion of the sheet metal (see figure 2) constituting the terminal (111 – *contact*) at one side nearer to the frame than the bent portion (142 – *body portion*), the stopper protruding from a surface of the frame (102 – *housing*) where the contact portion (140 – *contact portion*) of the terminal protrudes, whereby the stopper being configured

to restrict bending of the sheet metal (See column 5, lines 25-27 **and** notice “*The contact 111 can be made from metal...* ”) constituting the terminal within a threshold value of reversibility of a material of the metal (column 4, lines 15-19), and an electronic circuit (505 – *printed circuit board*) connected electrically with the electronic device via a contact portion (173 – *contact pads*), electronic circuit being configured to supply electric power to the electronic device (It is implicit that an electronic circuit is configured to supply electric power). Aujla et al. does not explicitly teach or restrict an electro-acoustic converter comprising the conventional components for the purpose of easily mounting a reliable electrical connection to an external circuit. AAPA teaches an electro-acoustic converter (Background Art, line 12) comprising: a magnetic circuit (4); a frame bonded to the magnetic circuit; a diaphragm bonded to a circumferential edge of the frame (Background Art, lines 16-17); a voice coil attached to the diaphragm in a manner that a part thereof is located in a magnetic gap of the magnetic circuit (Background Art, lines 16-17); a terminal made of a sheet metal having spring property and electrical conductivity (Background Art, line 22), a part of the terminal being fixed to the frame (Background Art, line 20) and electrically connected to the voice coil (Background Art, line 19) for the purpose of easily mounting a reliable electrical connection to an external circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to use Aujla et al. electrical connector in the AAPA conventional electro-acoustic converter for the purpose of easily mounting a reliable electrical connection to an external circuit.

Regarding Claim 2:

Aujla et al. teaches the stopper (170 – *cylinder*) protrudes substantially perpendicularly from the surface (118 – *second surface*) of the frame (102 – *housing*) where the contact portion (140 – *contact portion*) of the terminal (111 – *contact*) protrudes (column 4, lines 13-20).

Regarding Claim 3:

Aujla et al. teaches an edge face (172 – *bottom surface of cylinder*) of the stopper (170 – *cylinder*) opposite to a surface of the frame (118 – *second surface*) where the contact portion (144 – *contact portion*) side of the terminal (111 – *contact*) protrudes is substantially parallel to the surface of the frame (102 – *housing*) where the contact portion (140 – *contact portion*) side of the terminal protrudes (See figures 2-4 **and** column 4, lines 13-20).

Regarding Claim 4:

Aujla et al. teaches the stopper (170 – *centrally disposed cylinder*, See column 4, line 15). Aujla et al. does not explicitly teach or restrict the stopper is one of a plurality of stoppers, and the terminal is provided with the plurality of stoppers. However Aujla et al. clearly discloses a cylindrical stopper (170 – *cylinder*) where several terminals (111, 112, 113, 114 – *contacts*) can be stopped by the stopper. Both Aujla et al. and applicant are interested in providing each terminal with a stopper for support. Therefore it would have been obvious to provide the Aujla et al. connector with stopper support for the terminal. One of ordinary skill in the art at the time of the invention would recognize that the Aujla et al. stopper and applicant's stopper are equivalent concerning the number of terminals that can be stopped from bending over a threshold value of reversibility.

Regarding Claim 5:

Aujla et al. teaches the stopper (170 – *cylinder*) has two surfaces (142 – *body portion* **and** 172 – *bottom surface of cylinder*) with an angle greater than 0° but less than 180° (See Figures 2-10 **and** notice *the angle greater than 0° but less than 180°*.) formed there between when viewed toward the surface of the frame (118 – *second surface*) where the contact portion (140 – *contact portion*) side of the terminal protrudes (See figures 2-4 **and** column 4, lines 13-20).

Regarding Claim 6:

Aujla et al. remains as applied above. AAPA teaches the electro-acoustic converter (Background Art, line 12), wherein the two surfaces are substantially orthogonal with respect to each other (See Figure 6 **and** notice *the two surfaces are substantially orthogonal with respect to each other*).

Regarding Claim 7:

Aujla et al. teaches a reinforcing rib (176 **and** 177 – *retention members*) formed substantially in parallel with a direction in which the stopper (170 – *cylinder*) protrudes from the frame (See Column 4, lines 1-5 **and** notice *the ribs are formed substantially parallel with a direction in which the stopper protrudes from the frame along a vertical axis – 152*).

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: US Patents - Han et al. 6,553,126 B2, Ohta 7,181,040 B2, Kaneda et al. 6,807,282 B2 and US PGPub Caveney 2005/0152536 A1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASMINE PRITCHARD whose telephone number is (571)270-3712. The examiner can normally be reached on Monday-Friday 7:30am-5:00pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suhan Ni can be reached on 571-272-7505. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P./  
Examiner, Art Unit 2614

/Suhan Ni/  
Primary Examiner, Art Unit 2614

Application/Control Number: 10/599,800  
Art Unit: 2614

Page 13